

CITY OF GREENSBORO 2004 WATER QUALITY RESULTS

MONITORED LEAVING THE TREATMENT PLANT

SUBSTANCE	UNIT	HIGHEST LEVEL ALLOWED by EPA MCL <sup>3</sup>	PUBLIC HEALTH GOAL MCLG <sup>4</sup>	RESULTS			VIOLATION	COMMENT	POTENTIAL SOURCE OF SUBSTANCES
				ANNUAL COMPLIANCE TESTING	AVERAGE	RANGE			
Aluminum	mg/L	REGULATED <sup>5</sup>	0.20		0.06	0.01-0.25	NO	Secondary Standard <sup>5</sup>	Residual from the Treatment Process
Antimony	mg/L	0.006	0.006	<0.003 <sup>6</sup> ND <sup>7</sup>			NO		Solder; electronics; fire retardants
Arsenic	mg/L	0.010	zero	<0.005 ND			NO		Erosion of natural deposits
Asbestos	MFL <sup>8</sup>	7	7	<0.170 ND			NO	Last regulatory sampling Dec. 2002	Erosion of natural deposits
Barium	mg/L <sup>2</sup>	2.000	2.000	<0.400 ND			NO		Erosion of natural deposits; metal refinery
Beryllium	mg/L	0.004	0.004	<0.002 ND			NO		Metal refinery; coal burning factory
Cadmium	mg/L	0.005	0.005	<0.001 ND			NO		Corrosion of galvanized pipes; natural erosion
Chloride	mg/L	REGULATED <sup>9</sup>	250		10.5	6.5-16.9	NO	Secondary Standard <sup>5</sup>	
Chlorine, Free residual	mg/L	4.0 MRDL <sup>11</sup>	4.0 MRDLG <sup>12</sup>		1.70	T <sup>1</sup> 1.23–2.19 M <sup>1</sup> 0.74–2.19	NO	Chlorine residual tested hourly, monitored continuously on-line	Water additive used to control microbes
Chromium	mg/L	0.100	0.100	<0.020 ND <sup>7</sup>			NO		Erosion of natural deposits; steel mills
Color	CU	REGULATED <sup>5</sup>	15		1.1	0.1–3.4	NO	Secondary Standard <sup>5</sup>	
Copper (see <i>Monitored at Customers' Tap</i> below)	mg/L <sup>2</sup>	REGULATED <sup>5</sup>	1.0		<0.01	<0.01–0.01	NO	Secondary Standard <sup>5</sup>	Corrosion of household plumbing
Cyanide	mg/L	0.200	0.200	<0.040 ND			NO		
Fluoride	mg/L	4.000	2.00	T <sup>1</sup> 0.65 M <sup>1</sup> 0.64	0.80	0.10–1.33	NO		Water additive which promotes strong teeth
Hardness, Total	mg/L	NOT REGULATED			45	35–81	NO	Considered to be moderately soft (USGS standards established in 1962)	Natural deposits and the treatment process
Iron	mg/L	REGULATED <sup>5</sup>	0.300	<0.060 ND <sup>7</sup>	<0.10	<0.10–0.02	NO	Secondary Standard <sup>5</sup>	Plumbing corrosion and natural deposits
Manganese	mg/L	REGULATED <sup>5</sup>	0.050	<0.010 ND	<0.010	<0.010–0.010	NO	Secondary Standard <sup>5</sup>	Plumbing corrosion and natural deposits
Mercury	mg/L	0.002	0.002	<0.0004 ND			NO		Landfill and cropland runoff; natural deposits
Nickel	mg/L	NOT REGULATED	0.100	<0.100 ND			NO		Erosion of natural deposits
Nitrate as Nitrogen	mg/L	10.0	10.0	<1.00 ND	0.23	0.08–0.61	NO		Fertilizer runoff; sewage; natural deposits
pH	SU	REGULATED <sup>5</sup>	6.5–8.5	T <sup>1</sup> 7.57 M <sup>1</sup> 7.86	7.4	7.0–7.9	NO	Secondary Standard <sup>5</sup>	
Phosphorus, Total	mg/L <sup>2</sup>	NOT REGULATED			0.27	0.11–1.44	NO		Fertilizer runoff; Corrosion control treatment
Selenium	mg/L	0.050	0.050	<0.010 ND			NO		Mine waste; natural deposits
Sodium	mg/L	NOT REGULATED		T <sup>1</sup> 6.88 M <sup>1</sup> 15.8	10.6	6.0–16.9	NO		Naturally occurring minerals in the soil
Sulfate	mg/L	REGULATED <sup>5</sup>	250	T <sup>1</sup> 15 M <sup>1</sup> 26	19.9	14.5–24.5	NO	Secondary Standard <sup>5</sup>	Naturally occurring minerals in the soil
Total Dissolved Solids (TDS)	mg/L	REGULATED <sup>5</sup>	500		85	66–115	NO	Secondary Standard <sup>5</sup>	Erosion of natural deposits; treatment process
Thallium	mg/L	0.002	0.0005	<0.001 ND <sup>7</sup>			NO		Leaching from ore-processing
Turbidity	NTU <sup>10</sup>	TT <sup>9</sup>	N/A <sup>14</sup>		T <sup>1</sup> 0.06 M 0.03	T 0.01–0.27 NTU M 0.01–0.18 NTU T 100%<0.30 M 100%<0.30	NO	100% of all samples were <0.30. The EPA requirement is 95%.	Soil Runoff
Zinc	mg/L <sup>2</sup>	REGULATED <sup>5</sup>	5.0		<0.01 ND	<0.01	NO	Secondary Standard <sup>5</sup>	Corrosion plumbing fixtures; industrial waste
<b>VOLATILE ORGANIC CHEMICALS</b>							NO	50+ VOC'S tested; All others–Not Detected	
Chloroform	µg/L <sup>16</sup>	NOT REGULATED	N/A	T <sup>1</sup> 12.6 M <sup>1</sup> 26.2			NO		By-product of drinking water disinfection
Bromoform	µg/L	NOT REGULATED	zero	T<0.5 M <0.5 ND			NO		By-product of drinking water disinfection
Bromodichloromethane	µg/L	NOT REGULATED	zero	T 5.87 M 12.9			NO		By-product of drinking water disinfection
Chlorodibromomethane	µg/L	NOT REGULATED	60.0	T 0.80 M 2.3			NO		By-product of drinking water disinfection
<b>DISINFECTION BY-PRODUCT PRECURSORS</b>									
Total Organic Carbon	mg/L	TT <sup>9</sup>			T 2.36 M 1.99	T <sup>1</sup> 1.84–3.30 M 1.26–2.52	NO	Compliance based on 35-45%removal	Naturally present in the environment
<b>SYNTHETIC ORGANIC CHEMICALS</b>								Includes pesticides and herbicides	Pesticide/herbicide runoff
26 SOC's	mg/L <sup>2</sup>	REGULATED		Not Detected ND			NO	Compliance sampling March 2003	
13 SOC's	mg/L	NOT REGULATED		Not Detected ND			NO	Next regulatory sampling March 2006	
<b>RADIONUCLIDES</b>								Compliance sampling 2003; Next regulatory sampling 2009	
Gross Alpha	pCi/L <sup>13</sup>	15	zero	T <sup>1</sup> <3 M <sup>1</sup> <3 ND <sup>7</sup>			NO		Erosion of natural deposits
Uranium	pCi/L	20	zero	T 3.8 M <2			NO		Erosion of natural deposits
Radium 226	pCi/L	3	zero	T <1 M <1 ND			NO		Erosion of natural deposits
Radium 228	pCi/L	2	zero	T <1 M <1 ND			NO		Erosion of natural deposits
Gross Beta	pCi/L	50	zero	T <4 M 4.1			NO		Decay of natural and man-made minerals

MONITORED IN THE DISTRIBUTION SYSTEM

<b>DISINFECTION BY-PRODUCTS</b>								
Total Trihalomethanes TTHM	µg/L <sup>16</sup>	80.0	N/A	43.1	20.5–75.5	NO		By-product of drinking water disinfection
Total Haloacetic Acids HAA5	µg/L	60.0	N/A	34.2	14.3–63.9	NO		By-product of drinking water disinfection
Chlorine, Free residual	mg/L	4.0 MRDL <sup>11</sup>	4.0 MRDLG <sup>12</sup>	0.98	0.01–2.84	NO	Tested as each bacteriological sample is collected (1856 in 2004)	Disinfection additive used to control microbes
Coliform Bacteria (includes fecal and E. Coli)		<5.0% positive	zero	0.0%		NO	1,856 distribution samples collected in 2004	Naturally present in the environment

MONITORED AT THE CUSTOMERS TAP

Lead June–Sept. 2004	µg/L <sup>16</sup>	15.0 AL <sup>15</sup>	zero	100% of homes tested were below A.L.* 90 <sup>th</sup> percentile=0.004	<3.0–10.0	NO	50 at-risk homes tested every 3 years by a State certified lab for Copper and Lead;	Corrosion of Household Plumbing
Copper June–Sept. 2004	mg/L <sup>2</sup>	1.30 AL	1.30	100% of homes tested were below A.L. 90 <sup>th</sup> percentile=0.120	<0.05–0.249	NO	All consumer complaints tested for Copper and Lead by the Water Resources Lab	Corrosion of Household Plumbing

\*one home that had historically never shown any Lead initially tested above the Action Level—on re-sampling the same tap under the same conditions, it proved to be Lead-free. A lab error was indicated.

DEFINITIONS AND KEY TO ABBREVIATIONS USED IN THE TABLE

1	<b>T</b>	Townsend Water Plant, located northeast of Greensboro, with source water supplied by Lake Townsend
	<b>M</b>	Mitchell Water Plant, located in central Greensboro, with source water supplied by Lake Brandt
2	<b>mg/L</b>	Milligrams per Liter equivalent to Parts per Million (ppm). (Corresponds to one penny in \$10,000, or one minute in two years.)
3	<b>MCL**</b>	Maximum Contaminant Level, enforceable standards, which are established by EPA to protect the public against consumption of drinking water contaminants that present a risk to human health.
4	<b>MCLG</b>	Maximum Contaminant Level Goal, the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.
5	<b>Secondary Standards</b>	Non-enforceable guidelines for drinking water due to aesthetic considerations such as taste, color and odor. These substances are not considered a risk to human health at the established levels.
6	<b>&lt;</b>	Less than symbol, which means below the detection limit of the instrument
7	<b>ND</b>	Non-Detects, laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used
8	<b>MFL</b>	Million Fibers per Liter, count of asbestos fibers that are longer than 10 micrometers
9	<b>TT</b>	Treatment Technique, a required process intended to reduce the level of a contaminant in drinking water
10	<b>NTU</b>	Nephelometric Turbidity Unit, measures the cloudiness of the water; at no time can the turbidity go above 1.0 NTU, and must not exceed 0.30 in 95% of daily samples in any month
11	<b>MRDL</b>	Maximum Residual Disinfectant Level, the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
12	<b>MRDLG</b>	Maximum Residual Disinfectant Level Goal, the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of disinfectants to control microbes.
13	<b>pCi/L</b>	Picocuries per Liter is a measure of radioactivity in water
14	<b>N/A</b>	Not-Applicable, information not applicable/not required for the water system or for that particular regulation
15	<b>AL</b>	Action Level, the concentration of a contaminant that triggers treatment changes or other requirements. If more than 10% of tap samples exceed the AL for Copper and Lead, water systems must take additional steps.
16	<b>µg/L</b>	Micrograms per Liter equivalent to Parts per Billion (ppb) Corresponds to one penny in \$10,000,000 or one minute in 2,000 years
	<b>**MCL note</b>	MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 Liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.